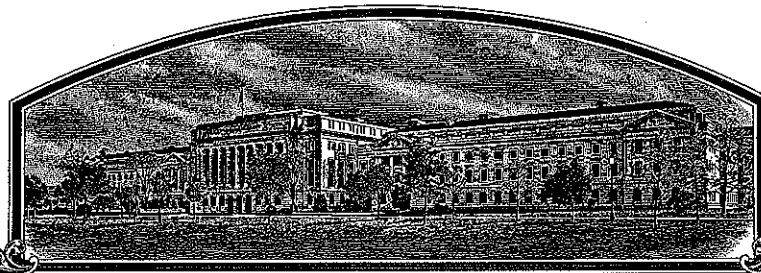


No.

200200014



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Grasslanz Technology Limited

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR PROPAGATING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE FOREGOING PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

CLOVER, WHITE

'GRASSLANDS KOPU II'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this fifth day of June, in the year two thousand and eight.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

200200014

REPRODUCE LOCALLY. Include form number and date on all reproductions.
0581-0055

FORM APPROVED - OMB No.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paper Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S). (As it is to appear on the Certificate)

AGRESEARCH LIMITED Grasslanz Technology Limited

2. TEMPORARY DESIGNATION OR
EXPERIMENTAL NUMBER
GC583. VARIETY NAME
GRASSLANDS KOPU II

4. ADDRESS (Street and no. or R.F.D. No., City, State, and ZIP Code, and Country)

5th Floor, Tower Block
Ruakura Research Centre, East Street,
Private Bag 3115, Hamilton,
New Zealand

Private Bag 11008
Tennent drive
Fitzherbert West
Palmerston North
New Zealand

5. TELEPHONE (include area code)

+64 6 351 8255
-0064 6 356 8019

FOR OFFICIAL USE ONLY

PVPO NUMBER

200200014

6. FAX (include area code)

+64 6 351 8240
-0064 6 351 8032

FILING DATE

10/16/2001
RTRIF THE OWNER NAMED IS NOT A 'PERSON'. GIVE FORM OF
ORGANIZATION (corporation, partnership, association, etc.).

Crown Research Institute

8. IF INCORPORATED, GIVE
STATE OF INCORPORATION

9. DATE OF INCORPORATION

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers)
EXAMINATION

Mr A.E. (Tony) Stratton, AgResearch (USA) Limited, P.O. Box 8159,
Asheville,
NC 28814
United States of America
JEFF E. Miller

FILING AND

FEES:

F
E
E
S
R
E
C
I
V
E
D

\$ 2765.00

DATE 10/16/2001

CERTIFICATION FEE:

\$ 768.00

DATE 9/5/07

11. TELEPHONE (include area code)

+64 6 351 8027
-828 258 8525

12. FAX (include area code)

+64 6 351 8240
-828 281 4805

13. E-Mail

Jeff.miller@grasslanz.com
AESStratton@aol.com

14. CROP KIND (Common name)

WHITE CLOVER

15. GENUS AND SPECIES NAME OF CROP

Trifolium repens

16. FAMILY NAME (Botanical)

Leguminosae

17. IS THE VARIETY A FIRST GENERATION
HYBRID?☐ YES ☒ NO18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on
reverse)
Protection Act)

- a. ☒ Exhibit A. Origin and Breeding History of the Variety.
- b. ☒ Exhibit B. Statement of Distinctness
- c. ☒ Exhibit C. Objective Description of Variety
- d. ☒ Exhibit D. Additional Description of the Variety (Optional)
- e. ☒ Exhibit E. Statement of the Basis of the Owner's Ownership.
- f. ☒ Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public Repository)
- g. ☒ Filing and examination Fee (\$2,450) made payable to 'Treasurer of the United States' (Mail to the Plant Variety Protection Office)

22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED
FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U.S OR
OTHER COUNTRY?☒ YES ☐ NO

New Zealand March 2001 - First commercial sale.

IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE
FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse)19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A
CLASS OF CERTIFIED SEED? See Section 83(a) of the Plant Variety☒ YES (If 'yes' answer item 20) ☐ NO (If 'no' go to item 22)20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED
TO NUMBER OF GENERATIONS?☒ YES ☐ NO

21. If 'YES' to item 20, which classes of production beyond breeder seed?

☐ FOUNDATION ☐ REGISTERED ☒ CERTIFIED23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY
INTELLECTUAL PROPERTY RIGHT (PLANT BREEDERS RIGHT OR ATENT)?☒ YES ☐ NO

NZ PVR Certificate number 1779 dated 28/2/2001

The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or
for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is (are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42.
and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER

J.E. Miller

SIGNATURE OF OWNER

NAME (Please print or type)

J. E. MILLER

NAME (Please print or type)

EXHIBIT 'A'

Grasslands Kopu II Breeding History and Maintenance Programme

Grasslands Kopu II was developed from persistent genotypes that had high yields in the fourth year of an evaluation of a world collection of 110 white clover cultivars at Palmerston North. Twenty-four genotypes that had persisted under rotational sheep grazing with a minimum of 10 grazings per year (Woodfield & Caradus 1994) were selected from eight cultivars (Crau, SC-1, Tillman, Aran, Regal, Tahora, Pitau and Huia) and two experimental populations (C6531 and C6532) based on high clover yields, high stolon growing point density per m², large-leaf size, and persistence (as indicated by high clover content) in the final year (Caradus *et al.* 1991).

These genotypes were polycrossed in an isolation cage to produce F₂ progenies that were then screened as spaced plants at Lincoln for uniform flowering pattern, high seed yield (i.e high inflorescence numbers per plant and high numbers of seed per inflorescence) and absence of foliar diseases such as leaf spot, powdery mildew and sclerotinia. Twenty-four parents were selected and polycrossed in an isolation cage to provide the pre-breeder seed of Grasslands Kopu II.

The 0.3 ha breeder's seed crop was produced by insect pollination in the field at Lincoln with an isolation distance of over 400m. The foundation and all subsequent multiplications to provide commercial seed generations were done without further selection. The decision to commercialise Kopu II was based on the strong performance of the pre-breeder population in Northern USA (Woodfield *et al.* 1998) and in the Northern New Zealand (Woodward & Caradus 2000; Woodfield *et al.* 2001).

This variety is maintained by long term storage of the residual pre-breeder seed line and storage of the foundation seed in germplasm cool-storage facilities at Palmerston North and Lincoln, New Zealand respectively. The foundation seed is sourced for further seed increases within the New Zealand and USA Seed Certification schemes.

References

- Caradus, J.R.; van den Bosch, J.; Woodfield, D.R.; Mackay, A.C. 1991. Performance of white clover cultivars and breeding lines in a mixed species sward. 1. Yield and clover content. *New Zealand Journal of Agricultural Research* 34: 141-154.
- Woodward, S.L.; Caradus, J.R. 2000. Performance of white clover cultivars and breeding lines in rotationally grazed Waikato dairy pasture, New Zealand. *New Zealand Journal of Agricultural Research* 43: 323-333.
- Woodfield, D.R.; Albrecht, K.; Bures, E.; Green, W. 1998. Characterization and performance of Wisconsin white clover ecotypes. *Proceedings of the 15th Trifolium Conference* p.15.
- Woodfield, D.R.; Caradus, J.R. 1994. Genetic improvement in white clover representing six decades of plant breeding. *Crop Science* 34: 1205-1213.
- Woodfield, D.R.; Clifford, P.T.P.; Cousins, G.R.; Ford, J.L.; Baird, I.; Miller, J.E.; Woodward S.L.; Caradus, J.R. 2001. Grasslands Kopu II and Crusader: New generation white clovers. *Proceedings of the New Zealand Grassland Association* 63: 103-108

PVP Application No. 200200014

'Grasslands Kopu II'
(*Trifolium repens* L.)

Evidence of Uniformity & Stability.

'Grasslands Kopu II' was subjected to replicated spaced plant field trials in 1998/99, 1999/200 & 2000/01 in New Zealand for the purposes of supporting our application for Plant Variety Rights (PVP in US) in New Zealand, a Union for the Protection of New Varieties of Plants (UPOV) member state.

Data collection was in accordance with published Union for the Protection of New Varieties of Plants (UPOV) recommendations both in general terms and specific Technical Guideline terms (UPOV TG 38/7).

These data showed that 'Grasslands Kopu II' was sufficiently uniform in terms of its variability given the nature of its propagation to meet the UPOV standards (i.e. the variance of the new variety as a ratio of the mean of the combined variance of the comparators.

The stability of characters measured/scored was such that those characters defining a difference between 'Grasslands Kopu II' and the comparators were satisfactorily consistent over the trial years.

The variability and stability thus met the requirements of the New Zealand Plant Variety Rights Office and a Grant of Rights No 1779 was made with effect 28 February 2001.

At the time of the NZ grant there have been 3 generations of seed on which to base these observations. Since that time there have been at least another 5 high grade seed increases to meet commercial requirements within the New Zealand Seed Certification Scheme in which field crops are inspected by independent Authority Inspectors under the control of the Independent Auditing Company AgriQuality.

No problems have been encountered requiring crop rejection based on Uniformity or Stability of characters expressed in this variety.

Variants *per se* have not been observed in this white clover variety, but those familiar with this species will recognise the difficulty in defining a **variant** from an **off-type**. White clover is inherently variable due to its heterozygous form and genealogical background. Indeed, some variability is desirable from an agronomic perspective for robustness in farming practices.

Seed production practices and certification protocols requiring isolations minimise contamination from other white clover crops. However, it would be a brave person to

confidently claim that a white clover plant in a white clover population was of another variety (**off-type**) unless there was some outstanding readily observable difference.

No readily identifiable **off-types** have been observed in plots or crops of 'Grasslands Kopu II'

The applicant is confident on the information available that 'Grasslands Kopu II' is both **Uniform** and **Stable** and that the variety as bred is free of unacceptable **variants** or plants that would, by definition, be recognised as **off-types**.

EXHIBIT 'B'

PVP Application 200200014

('Grasslands Kopu II' – white clover)

Page 1 of 'Statement of Distinctness'. (revised).

The varieties identified as being the closest in the descriptive characters used to compare 'Grasslands Kopu II' with other varieties of common knowledge are:

'Aran' and 'Grasslands Kopu'.

The most similar variety is 'Aran'
Per letter of May 1, 2007
MAH

Three separate spaced plant replicated trials carried out at Palmerston North, New Zealand during 1997/98, 1998/99 * 1999/2000. (Random block 10 reps of 10 plants pooled within reps for means and sd's. Data from all available plants).

'Grasslands Kopu II' cf 'Aran'

- 'G.Kopu II' leaflets are longer than those of 'Aran'

Leaf length(mm) mean values:

(1998)	G. Kopu II	Aran	sediff	t-value(2 tail)1% (18df)	Score	Signif
	27.51	24.37	1.02	2.88	3.09	**
(1999)	27.6	26.4	1.09	2.88	1.09	ns
(2000)	31.64	28.71	0.54	2.88	5.43	**

- 'G. Kopu II' has larger leaves than 'Aran'

Leaf area (sq mm) L6000 leaf area machine.
(same ~100 leaflets as used for length/width measurements)

(1998)	4.83	4.06	0.35	2.88	2.2	*
(1999)	5.60	4.52	0.33	2.88	3.27	**

- 'G.Kopu II' has longer internodes than 'Aran'

Internode length(mm)

(1998)	26.26	23.90	1.38	2.88	1.71	ns
(1999)	32.22	27.35	1.62	2.88	2.88	**
(2000)	35.60	28.64	0.81	2.88	8.59	**

EXHIBIT 'B' (cntd)

PVP Application 200200014

('Grasslands Kopu II' – white clover)

Page 2 of 'Statement of Distinctness'. (revised).

- 'G. Kopu II' has fewer cyanogenic plants than 'Aran'.

Number of cyanogenic plants.

(1998)	G. Kopu II	+ve	133	-ve	47	Chi Square 14.00 (Pearson)	Sig 0.00018
	Aran	+ve	158	-ve	19		
(1999)	G. Kopu II	+ve	41	-ve	19	Chi Square 8.54 (Pearson)	Sig 0.00348
	Aran	+ve	54	-ve	6		

'Grasslands Kopu II' cf 'Grasslands Kopu'

- 'G. Kopu II' has longer internodes than 'G. Kopu'

.Stolon internodes (mm)

	G. Kopu II	G. Kopu	sediff	t-value(2 tail)1%	Score	Signif
(1998)	26.26	26.05	1.38	2.88	0.15	ns
(1999)	32.22	27.35	1.62	2.88	1.98	*
(2000)	35.60	30.20	0.81	2.88	6.64	**



Science Report 1 of 1

**Contract
Kopu II / Aran :: DNA Fingerprinting**

Prepared For

**Jeff Miller, IP Manager
Grasslanz Technology Limited**

Prepared By

**Brent Barrett,
Senior Research Scientist, Forage Genomes Mapping
Forage Improvement
AgResearch Limited**

30 April 2007

Objective

To distinguish white clover varieties "Kopu II" and "Aran" using microsatellite DNA markers.

Methods

DNA of twelve individuals grown from nucleus seed of each variety was purified and tested with an array of ten publicly available microsatellite markers. Data were collected in a manner consistent with published procedures (Barrett et al. 2004) and are not confidential. All markers were labelled with FAM flourophor to detection in an ABI3100 genetic analyser using LIZ500 size standard on a 22 centimetre array filled with POP7 polymer.

The Chi-square statistic was used to test if the frequency of an allele was significantly different between the two samples. The calculation was made in the most conservative way. Specifically, the allele frequency recorded in Kopu II was used as the 'expected' component of the statistic calculation, the frequency recorded in Aran was used as the 'observed' component. For the allele in question, 11 observations were made in each of the variety samples, i.e. one of the DNA marker tests failed in each population. This makes no material difference to the outcome, but is included here for completeness.

Results

Ten microsatellite markers were used to test the 12 individuals of each variety sample, resulting in a data grid with 43 alleles scored among the 24 individuals, resulting in a total of 1032 datapoints. The dataset was examined to identify the simplest way of distinguishing the two populations. Microsatellite prs305 is a publicly available white clover marker. The prs305 allele of size 128 showed a significant ($p < 0.05$) difference in distribution among the two samples, being present in 55% (6 of 11) of the Kopu II individuals sampled, and only 9% (1 of 11) of the Aran individuals sampled. This marker is diagnostic to declare if a sample of seed is a potential match to either Kopu II nucleus seed or Aran nucleus seed, and is in itself sufficient to distinguish the two varieties nucleus seed lots. A trace of the allele profile of prs305 in the two samples is included, showing a case where the allele is present in Kopu II and absent in Aran.

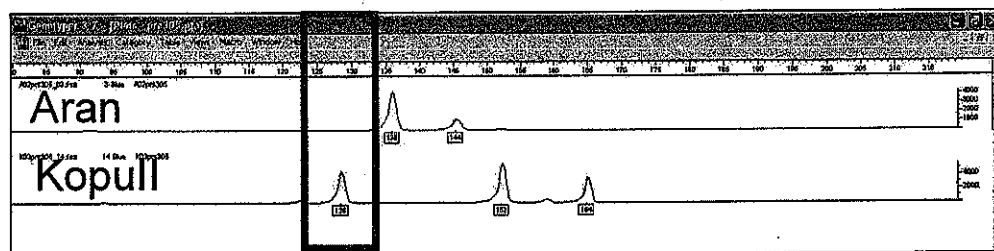


Figure 1. DNA trace showing allele 128 which occurs at a significantly higher frequency in Kopu II than in Aran.

Appendix 1. Addressing the USDA examiner requirements as outlined by Mark Hermeling in an email to Jeff Miller dated 7 March 2007.

1. The experimental design or procedures followed are published in a peer reviewed journal and cited.

Procedures were consistent with those published in

Barrett B, Griffiths A, Schreiber M, Ellison N, Mercer C, Bouton J, Ong B, Forster J, Sawbridge T, Spangenberg G, Bryan G, and D Woodfield (2004) A microsatellite map of white clover. *Theoretical and Applied Genetics* 109:596-608.

Cochran, WG. (1952) The X^2 test for goodness of fit. *Annals of Mathematical Statistics* 23:315-345

2. No Part of the experimental design or procedures are confidential.

All procedures are publicly available as published in

Barrett B, Griffiths A, Schreiber M, Ellison N, Mercer C, Bouton J, Ong B, Forster J, Sawbridge T, Spangenberg G, Bryan G, and D Woodfield (2004) A microsatellite map of white clover. *Theoretical and Applied Genetics* 109:596-608.

3. The specific differentiating bands are cited.

As per this report, microsatellite marker prs305 allele size 128 nucleotides in length as assayed.

4. Photographic copies of scientific publishable quality with sufficient resolution and labelling to resolve the individual bands in question.

As per this report, Figure 1.

5. If the procedure is not well established and accepted, the results are from a[t] least two independent laboratories with the experimental design found to be reliable.

Microsatellites are an industry standard DNA marker technology.

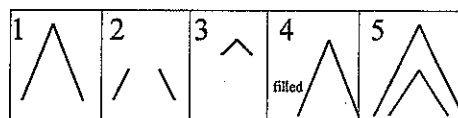
200200014

white clover - 2

WHITE CLOVER LEAF MARKING (at 50% flowering): Note categories below allow for increasingly detailed description of the same data. Diagram illustrates terms:

1 = Full V. 2 = Broken V. 3 = V-Point.

4 = Filled V. 5 = Double V.



Presence of mark: of total plants, give percentage of marked and unmarked plants (total = 100%)

0 2 7 % Absent

0 7 3 % Marked

Shape of mark: of total plants, give percentage having each shape (Total = % marked above)

0 5 3
0 0 0 % Full V

0 0 4
0 0 3 % Broken V

0 1 3
0 0 0 % V- Point

% Filled V.

% Double V

% full 'V' with red fill

ANTHOCYCANIC (Red) LEAF MARKINGS. (Some leaves of plants examined should have developed at temperatures of 10° C or less): of total plants give percentage marked (red flecking, red midrib, or red leaf) and unmarked (Total = 100%).

1 0 0 % absent.

0 0 0 % fleck marked

5. STOLON: Give widest diameter of stolon at point of attachment of leaf measured above (3rd node from p).

3^16 mm

0 ^42 thicker than

1 standard variety (Sustain)

0 ^17 thicker than

2 standard variety 'G. Kopu'

6. FLORETS PER FLOWER HEADS (At 50% flowering of variety):

9 9

1 6 More than

0 5 More than

1 standard variety (Sustain)

4 standard variety (Aran)

7. DISEASE AND PEST RESISTANCE: (0 = not tested, 1 = susceptible, and 2 = resistant). If variety is claimed to be resistant or to show intermediate reaction, substantiating test scores should be attached clearly identifying disease, application variety, check varieties, location of test, and range and direction of test scores.

A. STOLON AND ROOT ROTS.

0 Fusarium spp
0 Rhizoctonia spp
0 Colletotrichum spp
0 Leptodiscus spp
0 Cervularia spp
0 Sclerotium rolfsii
0 Sclerotinia trifoliorum

B. VIRUSES.

0 Alfalfa mosaic
0 White clover mosaic
0 Clover yellow mosaic
0 Clover yellow vein mosaic
0 Red clover vein mosaic
0 Peanut stunt
0 Other (specify).....

C. NEMATODES.

0 Root knot
0 Sting
0 Meadow
0 Clover cyst

D. INSECTS

0 Lygus bugs (Lygus spp)
0 Spider mites (Tetranychus spp)
0 Clover seed weevil (Miccotrogus picrostris)
0 Clover seed midge (Dasineura gentneri)
0 Clover head weevil (Hypera meles)
0 Clover leaf weevil (H. punctata)
0 Lesser clover leaf weevil (H. nigrirostris)
0 Alfalfa weevil (H. Postica)
0 Meadow spittlebugs (Philaenus spumarius)
0 Clover root curculio (Sitonia hispidula)
0 Potato leafhopper (Empoasca fabae)
0 Other (Specify).....

8.

Indicate the variety most closely resembling the application variety for the following :

CHARACTER	VARIETY	CHARACTER	VARIETY
Leaflet width	Aran	Internode length	Grasslands Sustain
Petiole length	Kopu	Peak flowering	Aran
Petiole width	Aran	Floret length	Aran

Brewbaker, J.L. and H.L. Carnahan. 1956. Leaf marking alleles in white clover. Uniform nomenclature. Journ. Heredity 47: 103 - 104.

Hawkins, R.P. 1959. Botanical characters for the classification and identification of varieties of white clover. J. Nat. Inst. Agr. Bot. 8. 675-682.

I.S.T.A. (Herbage) Variety Committee, 1972. Draft paper on tests for identification and trueness to cultivar. Proc. Int. Seed Test. Assoc. 37: 443-495.

'Grasslands Kopu II'
(*Trifolium repens*.L)

200200014

EXHIBIT 'D'

Combined-over-years Uniformity.

Within-Plot Standard Deviations as a % mean of comparator SD's.

Character	Kopu II	Crusader	Bounty	Aran	Challenge	Sustain	Kopu	Pitau	Huia
Habit	99	97	98	102	105+	101	98	98	100
Density	99	101	100	100	103	94	101	101	100
*Leaf lngth	100	98	99	101	102	98	102(1)	101	98
*Leaf width	100	98	100	102	101	100	101	100	98
Leaf area	101(2)	101	99	103(1)	103(2)	102	101(1)	101	89
Petiole lngth	100	99	100	99	100	100	101	101	99
Petiole width	100	97	99	105(1)	103	102	100	101	94
Internode lngth	101	99	100	99	100	100	100	100	100
Stolon thick	105(2)	97	100	107(2)	98	99	99	99	97
Peduncle lngth	101(1)	100	99	100	100	100	100	100	99
Peduncle thick	104(1)	101	96	102	98	98	101	101	99
Flower head size	100	100	96	104	97	101	98	100	100(1)
Floret lngth	95	100	103	102	103	99	100	98	100
Floret No.	99	100	100	99	102(1)	100	101	100	99
*Flower days	100	100	100	99	100	101	100	100	100

Symbols: + = SD Exceeds over-years criterion after 3 years with $P < 0.01$

* = UPOV obligatory descriptive characters

1,2,3 – The number of occasions the within-years SD exceeds the UPOV criterion

In no instance where the over-years criterion was exceeded by 'Grasslands Kopu II' for uniformity for a particular character is that character essential to the distinctness of this variety from any of the comparators.

Grasslands Kopu II'

Variety means from combined over years analysis from DUS trials at Palmerston North 1998-2001
and leaf mark percentages from 1999/2000

(*) = UPOV obligatory characters from TG 38/6

(†) = name preceded by 'Grasslands'

Character	†Kopu II	Aran	†Bounty	†Challenge	†Crusader	†Colt	†Demand	†Destiny	†Huia	†Kopu	†Pitau	†Prestige	†Sustain	†Tahora
*Leaflet length (mm)	28.9	26.5	22.1	26.1	20.9	19.7	19.5	20.2	19.9	28.7	24.8	18.7	25.3	16.0
*Leaflet width (mm)	23.32	22.96	18.86	21.38	17.58	15.63	16.34	16.55	16.85	22.57	20.54	15.93	20.32	13.55
*Days to mean flower	41.0	40.0	42.6	38.6	35.5	26.8	41.0	42.8	40.8	39.5	39.7	37.3	38.3	37.4
Growth habit 1-9 prostrate	3.9	3.9	4.7	4.2	4.6	5.4	4.8	4.7	4.8	3.9	4.2	5.1	4.2	5.4
Leaf density 1-9 dense	3.8	3.7	4.3	4.1	3.9	4.3	4.4	4.0	4.7	4.0	4.2	5.0	3.9	5.3
Leaf area Auto cm ²	4.91	5.02	3.35	4.42	2.88	2.58	2.48	2.56	2.56	5.13	3.68	2.40	4.21	1.72
Petiole length(mm)	97.4	94.6	84.9	88.4	72.1	59.6	76.3	71.1	75.4	97.5	90.1	65.6	93.8	60.1
Petiole width(mm)	1.78	1.76	1.39	1.70	1.39	1.27	1.27	1.33	1.28	1.80	1.56	1.21	1.61	1.09
Stolon width(mm)	3.16	3.17	2.46	2.86	2.63	2.37	2.29	2.48	2.32	2.99	2.74	2.19	2.72	1.95
Internode Length(mm)	31.3	26.4	24.9	26.0	26.5	28.0	22.7	23.6	23.7	28.4	27.5	23.5	28.8	23.4
Peduncle Length(mm)	202.3	194.8	185.8	198.1	170.4	149.9	173.1	153.3	165.5	213.5	181.9	151.6	197.1	148.2
Peduncle Width(mm)	2.35	2.25	1.98	2.20	2.05	1.89	1.89	1.90	1.94	2.29	2.09	1.84	2.11	1.69
No. florets/head	99.2	94.4	80.2	90.3	86.7	81.4	77.8	79.9	81.7	99.3	86.1	75.1	83.0	72.4
Floret length(mm)	11.01	10.99	10.82	11.07	11.01	10.57	10.24	10.00	10.34	10.79	10.54	10.32	10.69	10.28
Flower head size (Auto cm ²)	14.09	14.00	12.53	13.66	13.62	12.36	12.29	11.83	11.88	13.12	12.10	11.52	12.91	11.63
*Plants with white leaf marks (%)	84	94	91	99	100	95	97	88	97	87	97	94	91	92

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EXHIBIT 'D''Grasslands Kopu II'Distinctness at $P < 0.01$ from combined over years analysis from DUS trials at Palmerston North 1998-2001

(*) = UPOV obligatory characters from TG 38/6

(+) = name preceded by 'Grasslands'

Character	Aran	+Bounty	+Challenge	+Crusader	+Colt	+Demand	+Destiny	+Huia	+Kopu	+Pitau	+Prestige	+Sustain	+Tahora
*Leaflet length (mm)	D	D		D	D	D	D	D		D	D	D	D
*Leaflet width (mm)		D	D	D	D	D	D	D		D	D	D	D
*Days to mean flower				D	D	D					D		
Growth habit													
1-9 prostrate													
Leaf density					D	D				D			
1-9 dense													
Leaf area		D		D	D	D	D	D		D	D		D
Auto cm ²		D		D	D	D	D	D			D		D
Petiole length(mm)		D		D	D	D	D	D			D		D
Petiole width(mm)		D		D	D	D	D	D		D	D		D
Stolon width(mm)		D	D	D	D	D	D	D	D	D	D		D
Internode Length(mm)	D	D	D	D			D	D	D	D	D		D
Peduncle Length(mm)				D	D	D	D	D		D	D		D
Peduncle Width(mm)		D	D	D	D	D	D	D		D	D	D	D
No. florets/head		D		D	D	D	D	D		D	D	D	D
Floret length(mm)							D	D			D		D
Flower head size (Auto cm ²)		D			D	D			D			D	

ADDITIONAL INFORMATION – 'Grasslands Kopu II'

Additional information is provided in tables of means and standard deviation ratios in support of **distinctness** and **uniformity** claims.

Trials were conducted at AgResearch Grasslands Research Institute at Palmerston North, New Zealand during 1998/99, 1999/2000 and 2000/2001. Each trial was of ~ 100 spaced plants of each candidate and comparator variety at 60cm spacings between plants and 120cm between plots. The plots were of 10 plants per variety in 10 randomised replicates in complete blocks. Data were recorded from all available plants using UPOV Guidelines to record states of expression of characters.

The first two years data were analysed using ANOVA to produce LSD's at 1% for Distinctness. Uniformity was calculated using the variance ratio technique.

During 2000/2001, the Statistical Programme recommended by UPOV and available from the Department of Agriculture for Northern Ireland was used. This programme called DUSTNT, which is the Windows version of the DUST software, has been written expressly for DUS testing and allows easy Combined – Over – Years Analysis of Distinctness and Uniformity. This programme was used to test the three years of data collected using MJRA. It is these results that are presented with this application.

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06/05/02 18 Oct 2001

SUMMARY ANALYSIS SHEETS FROM DUSTNT COY ANALYSIS FOR 1998/1999/2000

VARIETIES TO BE INCLUDED

		00	98	99
ABM3655G2	20	ABM3655G2	ABM3655G2	ABM3655G2
ABM9854G2	18	ABM9854G2	ABM9854G2	ABM9854G2
Beaumont	15	Beaumont	Beaumont	Beaumont
Triffid	13	Triffid	Triffid	Triffid
Crusader	16	Crusader	Crusader	Crusader
Milton	14	Milton	Milton	Milton
BarblancaG2	12	Barblanca	BarblancaG2	BarblancaG2
KopuIIG2	26	KopuIIG2	KopuIIG2	KopuIIG2
DestinyG2	30	DestinyG2	DestinyG2	DestinyG2
ColtG2	28	ColtG2	ColtG2	ColtG2
BountyG2	22	BountyG2	BountyG2	BountyG2
Aran	31	Aran	Aran	Aran
Challenge	35	Challenge	Challenge	Challenge
Sustain	36	Sustain	Sustain	Sustain
Demand	37	Demand	Demand	Demand
Kopu	33	Kopu	Kopu	Kopu
Lebons	32	LeBons	Lebons	Lebons
NusiralG2	24	NusiralG2	NusiralG2	NusiralG2
Pitau	34	Pitau	Pitau	Pitau
Prestige	40	Prestige	Prestige	Prestige
Tahora	39	Tahora	Tahora	Tahora
Huia	38	Huia	Huia	Huia

DATA OBTAINED FROM FOLLOWING FILES 1210001 1219801 1219901

VARIETY MEANS OVER YEARS

50	51	53	54	55	56	57	58	59	60
habit	density	lflength	leafwth	petlnth	petwth	Internod	stolthk	pedlength	pedthick
20	ABM3655G2								
4.29	3.74	23.55	20.07	75.21	1.59	24.64	2.73	164.07	2.13
18	ABM9854G2								
4.18	3.59	24.97	20.40	89.04	1.59	28.38	2.86	197.66	2.16
15	Beaumont								
4.15	3.95	25.80	21.00	98.44	1.67	26.89	2.77	209.39	2.20
13	Triffid								
4.14	3.91	27.61	21.85	92.95	1.69	31.54	2.87	195.82	2.17
16	Crusader								
4.57	3.91	20.90	17.58	72.10	1.39	26.47	2.62	170.39	2.05
14	Milton								
4.35	4.13	23.61	19.07	85.34	1.54	22.03	2.63	184.72	2.10
12	BarblancaG2								
4.44	4.08	25.09	20.83	86.55	1.54	31.04	2.74	177.30	2.05
26	KopuIIG2								
3.92	3.78	28.90	23.33	97.43	1.78	31.36	3.16	202.42	2.35
30	DestinyG2								
4.67	3.97	20.16	16.56	71.13	1.33	23.66	2.48	153.36	1.90
28	ColtG2								
5.45	4.30	19.69	15.64	59.69	1.27	28.06	2.38	150.04	1.89
22	BountyG2								
4.67	4.34	22.10	18.86	84.86	1.39	24.86	2.46	185.83	1.98
31	Aran								
3.88	3.73	26.50	22.96	94.64	1.76	26.43	3.16	194.78	2.25
35	Challenge								
4.21	4.07	26.09	21.38	88.41	1.70	26.03	2.87	198.06	2.20
36	Sustain								
4.16	3.94	25.28	20.33	93.84	1.61	28.85	2.73	197.24	2.11
37	Demand								
4.78	4.40	19.48	16.34	76.32	1.27	22.65	2.29	173.05	1.89

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	habit density	lflength	leafwth	petlnth	petwth	Internod	stolthk	pedlngth	pedthick
33 Kopu	3.90	3.98	28.70	22.58	97.58	1.80	28.42	3.00	213.58
32 Lebons	4.06	4.08	25.87	21.70	95.93	1.73	28.24	3.10	218.29
24 NusiralG2	4.31	3.64	23.54	18.39	68.84	1.46	27.44	2.62	158.72
34 Pitau	4.21	4.21	4.78	20.54	90.08	1.56	27.47	2.74	181.93
40 Prestige	5.06	4.95	18.75	15.94	65.65	1.21	23.50	2.19	151.71
39 Tahora	5.42	5.27	15.98	13.56	60.11	1.09	23.46	1.95	148.25
38 Huia	4.78	4.68	19.89	16.85	75.43	1.28	23.68	2.31	165.53

YEAR MS	1124.679	520.259	152.000	85.092	20865.340	2.509	1113.318		
2.104*****		5.850							
VARIETY MS	5.830	5.099	359.750	214.876	4711.870		1.263	235.782	
3.00714081.641		0.987							
VAR.YEAR MS	0.575	0.212	10.658	8.830	204.017		0.024	16.530	
0.063 836.382		0.027							
F1 RATIO	10.148	24.102	33.755	24.334	23.095		52.585	14.264	
47.408 16.836		36.353							
VAR.REP MS	0.142	0.175	4.649	3.410	116.460		0.019	9.823	
0.032 431.923		0.023							
F2 RATIO	4.040	1.206	2.292	2.589	1.752		1.297	1.683	
1.985 1.936		1.164							
BETWEEN SE	0.138	0.084	0.596	0.543	2.608		0.028	0.742	
0.046 5.280		0.030							
WITHIN SE	0.069	0.076	0.394	0.337	1.970		0.025	0.572	
0.033 3.794		0.028							
MJRA SLOPE	0	1.831	0.148	1.087	1.104		0.935	1.017	1.075
1.128 0.889		1.043							
MJRA SLOPE	98	-0.946	0.900	0.938	0.906		0.740	1.068	0.881
0.913 1.059		0.963							
MJRA SLOPE	99	2.015	1.909	0.975	0.989		1.319	0.914	1.043
0.959 1.051		0.994							
REGR F VAL	198.342	129.784	1.414	1.677	13.514		2.367	0.997	
4.988 1.053		0.394							
REGR PROB	0.000	0.000	25.504	19.988	0.003		10.675	37.787	
1.164 35.851		67.723							
TEST			MJR	MJR	COY		COY	MJR	COY
COY	COY	COY	COY						

1

WC1999

	61	62	63	64	65
	headsize	florleng	floretno	leafarea	flower
20 ABM3655G2	13.19	11.04	94.26	3.51	35.31
18 ABM9854G2	13.28	10.79	101.62	3.77	41.17
15 Beaumont	13.51	10.77	89.07	3.84	41.68
13 Triffid	13.59	10.75	93.27	4.46	40.11
16 Crusader	13.62	11.01	86.71	2.88	35.51
14 Milton	13.40	10.93	77.16	3.37	40.28
12 BarblancaG2	13.25	10.95	85.89	4.32	36.79
26 KopuIIG2	14.08	11.01	99.04	4.90	40.95
30 DestinyG2	11.83	10.00	79.73	2.56	42.71
28 ColtG2	12.35	10.57	81.19	2.58	26.70
22 BountyG2	12.53	10.82	80.17	3.35	42.59
31 Aran	14.00	10.99	94.44	5.02	40.04
35 Challenge	13.66	11.07	90.31	4.42	38.57
36 Sustain	12.91	10.69	82.84	4.20	38.25
37 Demand	12.29	10.24	77.77	2.48	41.00
33 Kopu	13.12	10.79	99.07	5.13	39.43
32 Lebons	14.71	11.35	118.64	4.23	41.80
24 NusiralG2	13.32	11.50	89.67	3.45	29.52
34 Pitau	12.10	10.54	86.10	3.68	39.74
40 Prestige	11.52	10.32	74.90	2.40	37.21
39 Tahora	11.63	10.28	72.22	1.72	37.37
38 Huia	11.88	10.34	81.74	2.56	40.75
YEAR MS	36241.051	43.047	4492.739	20.653	4456.933
VARIETY MS	21.993	4.064	3394.007	27.052	478.945
VAR.YEAR MS	1.010	0.595	196.952	1.478	27.803
F1 RATIO	21.780	6.831	17.233	18.308	17.226
VAR.REP MS	1.866	0.447	185.620	0.431	13.179
F2 RATIO	0.541	1.332	1.061	3.431	2.110
BETWEEN SE	0.183	0.141	2.562	0.222	0.963
WITHIN SE	0.249	0.122	2.487	0.120	0.663
MJRA SLOPE	0	0.482	0.768	1.094	1.113
MJRA SLOPE	98	1.722	1.286	0.735	0.938
MJRA SLOPE	99	0.748	0.926	1.164	0.947
REGR F VAL	62.051	3.142	5.973	1.189	4.097
REGR PROB	0.000	5.403	0.537	31.513	2.405
TEST	MJR	COY	MJR	COY	COY

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USING MJRA WHEN REGRESSION SIGNIFICANT AT 1% LEVEL

COMPARISONS WITH 26 KopuIIG2 +VE IF KopuIIG2 LARGER

AFP	NAME	1%	2%	5%	50	51	53	54	55	56	57	58	59	60	61	62	63	64	65
20	ABM3655G2	11	11	11	-	+	+1	+1	+1	+1	+1	+1	+1	+1	+1	-	+	+1	+1
18	ABM9854G2	8	8	9	-	+	+1	+1	+5	+1	+1	+1	+	+1	+1	+	-	+1	-
15	Beaumont	8	8	9	-	-	+1	+1	-	+1	+1	+1	-	+1	+5	+	+1	+1	-
13	Triffid	2	2	3	-	-	+	+	+	+5	-	+1	+	+1	+	+	+	+	+
16	Crusader	11	11	11	F3	-	+1	+1	+1	+1	+1	+1	+1	+1	+	+	+1	+1	+1
14	Milton	10	11	12	F3	-1	+1	+1	+1	+1	+1	+1	+5	+1	+2	+	+1	+1	+
12	BarblancaG2	10	11	11	F3	-2	+1	+1	+1	+1	+	+1	+1	+1	+1	+	+1	+	+1
30	DestinyG2	11	11	11	F3	-	+1	+1	+1	+1	+1	+1	+1	+1	+1	F3	+1	+1	-
28	ColtG2	12	12	13	F3	-1	+1	+1	+1	+1	F3	+1	+1	+1	+1	+5	+1	+1	+1
22	BountyG2	10	10	11	F3	F3	+1	+1	+1	+1	+1	+1	+5	+1	+1	+	+1	+1	-
31	Aran	2	2	3	+	+	+1	+	+	+	+1	-	+	+5	+	+	+	-	+
35	Challenge	4	6	8	-	F3	+1	+2	+2	+5	+1	+1	+	+1	+	-	+5	+	+
36	Sustain	7	7	9	-	-	+1	+1	+	+1	+5	+1	+	+1	+1	+	+1	+5	+
37	Demand	12	12	12	F3	F3	+1	+1	+1	+1	+1	+1	+1	+1	+1	+	+1	+5	+
33	Kopu	2	3	3	+	-	+	+	-	-	+1	+2	-	+	+1	+	-	-	+
32	Lebons	4	5	9	-	-2	+1	+5	+	+	+1	+	-5	-1	-5	-	-1	+5	-
24	NusiralG2	10	12	12	-	+	+1	+1	+1	+1	F3	+1	+1	+1	+1	-2	+2	+1	+1
34	Pitau	10	10	11	-	-1	+1	+1	+	+1	+1	+1	+1	+1	F3	+5	+1	+1	+
40	Prestige	12	12	12	F3	F3	+1	+1	+1	+1	+1	+1	+1	+1	F3	+1	+1	+1	+1
39	Tahora	11	12	12	F3	F3	+1	+1	+1	+1	+1	+1	+1	+1	F3	+1	+1	+1	+2
38	Huia	11	11	11	F3	F3	+1	+1	+1	+1	+1	+1	+1	+1	F3	+1	+1	+1	+

WC1999

SUMMARY FOR COYD CRITERION AT 1.0% LEVEL
USING MJRA WHEN REGRESSION SIGNIFICANT AT 1% LEVEL

CANDIDATE VARIETIES	20	18	26
20 ABM3655G2	-	D	D
18 ABM9854G2	D	-	D
15 Beaumont	D	D	D
13 Triffid	D	D	D
16 Crusader	D	D	D
14 Milton	D	D	D
12 BarblancaG2	D	D	D
<u>26 KopuIIG2</u>	D	D	-
30 DestinyG2	D	D	D
28 ColtG2	D	D	D
22 BountyG2	D	D	D
31 Aran	D	D	D
35 Challenge	D	D	D
36 Sustain	D	D	D
37 Demand	D	D	D
33 Kopu	D	D	D
32 Lebons	D	D	D
24 NusiralG2	D	D	D
34 Pitau	D	D	D
40 Prestige	D	D	D
39 Tahora	D	D	D
38 Huia	D	D	D

NO OF ND VARIETIES 0 0 0

OVERALL DISTINCTNESS D D D

CANDIDATE VARIETIES 20 18 26

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

1. NAME OF APPLICANT(S) GRASSLANZ TECHNOLOGY LIMITED	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER GC58	3. VARIETY NAME Grasslands Kopu II
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) Private Bag 11008, Fitzherbert West, Tennent Drive, Palmerston North 4442 New Zealand	5. TELEPHONE (Include area code) (646) 356-8027	6. FAX (Include area code) (646) 356-8240
7. PVPO NUMBER 200200014		

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain. ☒ YES ☐ NO

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country. ☐ YES ☒ NO

10. Is the applicant the original owner? ☐ YES ☒ NO If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES ☒ NO If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐ YES ☒ NO If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

The original owner of 'Grasslands Kopu II' was AgResearch Limited, a New Zealand Crown Research Institute. Grasslanz Technology Limited is a wholly owned but independent subsidiary company of AgResearch. On the establishment of Grasslanz Technology Limited (Grasslanz) on 3rd september 2003, 'Grasslands Kopu II' along with other intellectual property was assigned to Grasslanz.

The notification of change of ownership on the PVP registre has been recorded.

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

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EXHIBIT 'E'

STATEMENT OF OWNERSHIP

'Grasslands Kopu II'

'Grasslands Kopu II' white clover was bred by Dr Derek Woodfield, a scientist employed by AgResearch Limited at Grasslands Research Centre, Palmerston North, New Zealand.

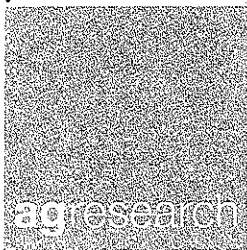
This work was carried out within the terms of employment of Dr Woodfield which confer no rights of ownership in the property developed in the course of his employment.

'Grasslands Kopu II' has been licensed to Wrightson Seeds Limited, P O Box 939, Christchurch, New Zealand for marketing both locally and internationally. They may appoint overseas agents as required to meet this objective.

The ownership of the variety remains with AgResearch Limited.

Signed.....*JE Miller*.....this *9th*.....day of *October*.....2001-10-04

Designation: Manager, Intellectual Property Rights
Grasslands Research Centre.



AgResearch Limited
Grasslands Research Centre
Tennent Drive, Private Bag 11008
Palmerston North, New Zealand

Telephone +64 6 356 8019
Facsimile +64 6 351 8032
www.agresearch.co.nz

200200014
CLOVER

20th October 2004

TO WHOM IT MAY CONCERN:

This document serves to give notice and authority for the transfer of ownership of the Intellectual Property described on the attached 'Schedule of Intellectual Property Currently Registered in the Name of *AgResearch Limited to be Assigned'. ('The Schedule').

The ownership of the Intellectual Property so described in 'The Schedule' attached is transferred to:

Grasslanz Technology Limited, Private Bag 11008, Tennent Drive, Fitzherbert West, Palmerston North, New Zealand.

effective from 1st July 2004.

Grasslanz is an Incorporated Company (No. 1368159) under the New Zealand Companies Act 1993 and a wholly owned subsidiary company of AgResearch Limited.

**Previously The New Zealand Pastoral Agriculture Research Institute Limited and formerly Department of Scientific and Industrial Research (DSIR).*

Dated this 3rd day of November 2004

Signed [Signature]
Director/Authorised Signatory for AgResearch Limited

200200014

Page 1 of 1

**'Schedule of Intellectual Property Currently Registered in the Name
of AgResearch Limited to be Assigned'**

(United States Plant Variety Protection Office)

Variety name/code	Grant/Application No.
Grasslands Egmont	8900219
Grasslands Puna	9000157
Grasslands Gala	9300233
Grasslands Tekapo	9400057
Grasslands Advance	9300283
Grasslands Demand	9600258
Grasslands Sustain	9600259
Tillman II	9800116
Dixon	200100129
Lakota	200100128
Grasslands Kopu II	200200014
Flecha	200300012
Durana (Joint Application)	200300305
Patriot (Joint Application)	200300304

grasslanz™
unique plant opportunities

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Jeff Miller
Intellectual Property
Manager

24

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3rd December 2004

The Commissioner
Plant Variety Protection Office
Agriculture Marketing Service
Dept. of Agriculture
Beltsville, Maryland 20705 - 2351

Assignment of ownership in Plant Varieties Registered in the United States.

Please find enclosed a Letter of Authority for the transfer of ownership of the plant varieties listed in the attached Schedule of Property to be Transferred.

Ownership has been transferred from *AgResearch Limited to:
*See Authority Letter

Grasslanz Technology Limited, Private Bag 11008, Tennent drive, Fitzherbert West, Palmerston North, New Zealand.

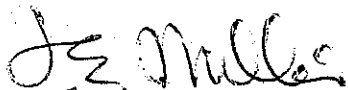
Would you please therefore amend your records to reflect these changes, and where relevant, note that Grasslanz Technology Limited is now also the maintainer of these varieties.

Please also note that in regard to those varieties registered in Joint Ownership only the AgResearch Limited interest is transferred to Grasslanz Technology Limited. The other partner details are unchanged.

Any costs incurred to Grasslanz Technology Limited for the requested actions will be paid on receipt of an invoice sent to the undersigned at the above address.

Thank you in anticipation.

Yours sincerely



Jeff E. Miller
Manager, Intellectual Property
GRASSLANZ TECHNOLOGY LIMITED

Enc.